

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 1104-2		Date of mailing (day/month/year) <b>19 DEC 2005</b> <b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. PCT/US05/04811	International filing date (day/month/year) 16 February 2005 (16.02.2005)	Priority date (day/month/year) 17 February 2004 (17.02.2004)
International Patent Classification (IPC) or both national classification and IPC IPC(7): A22C 29/02 and US Cl.: 452/2		
Applicant HULIN, MICHAEL J.		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

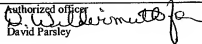
2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 23 November 2005 (23.11.2005)	Authorized officer  David Parsley Telephone No. (571) 272-6890
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Form PCT/ISA/237 (cover sheet) (April 2005)

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Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in electronic form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:
- ☒ paid additional fees
  - ☐ paid additional fees under protest and, where applicable, the protest fee
  - ☐ paid additional fees under protest but the applicable protest fee was not paid
  - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:

See the lack of unity section of the International Search Report (Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-53 and 75-86

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**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)

Claims 2-44, 48-50 and 75-86 YES

Claims 1, 45-47 and 51-53 NO

Inventive step (IS)

Claims 4, 27 and 80-86 YES

Claims 1-3, 5-26, 28-53 and 75-79 NO

Industrial applicability (IA)

Claims 1-53 and 75-86 YES

Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

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**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof: the spiral platform with cylindrical chute as claimed in claim 27 is not shown in the drawing figures.

Claim 27 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 27 is indefinite for the following reason(s): it is unclear to how the spiral platform achieves orbital motion.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1, 45-47 and 50-53 lack novelty under PCT Article 33(2) as being anticipated by U.S. Patent No. 3,594,860 to Nelson et al.

Referring to claims 1 and 51-53, Nelson et al. discloses an apparatus processing shellfish comprising, a fluid filled conk tank - at 50, for separating shellfish product from packing ice, sea shells and other such large objects and an automated means - at 14-28, for transporting the crated product to the conk tank - see for example figure 1, dumping the shellfish product into the conk tank from the crate and removing the crate - at 24, therefrom - see for example figures 1-2.

Referring to claim 45, Nelson et al. discloses an automated means of packaging shells and dust - see at 66-72 in figure 1. Referring to claim 46, Nelson et al. discloses a conk tank conveyor system - at 14-20, having a first loading end - see proximate 38,40 in figure 1, and a second dumping end - see proximate 54,60 or proximate 66-72 in figure 1, the dumping end extending above and beyond the edge of the conk tank - at 50 - see for example figure 1, a dumping cage - at 28,30, 24, disposed proximal to the dumping end of the conveyor system - see figure 1, positioned in a manner conducive to catching the crate - at 24, after it falls off the dumping end so the open top portion of the cage is oriented towards the conk tank - see figure 1, thereby emptying the contents of the crate therein - see figure 1, the dumping cage being substantially open so as not to restrict passage thereof through of the shellfish product - see for example figure 1 and a mechanical means - at 14,22, for ejecting the crate from the dumping cage - see for example figure 1.

Referring to claim 47, Nelson et al. discloses the conk tank comprises a watertight housing - at 50, having sidewalls and an open top - see for example figure 1, a substantial quantity of water retained within the housing - see at 52 in figure 1, and means - at 62,64, for agitating the water and lighter objects within the conk tank - see for example figure 1.

Referring to claim 50, Nelson et al. discloses a dumping cage - at 28, for discharging crated seafood product into a conk tank - at 50, comprising means for receiving the crated seafood product - at 22, means for displacing the crate - at 14,18,20, whereby the crate is up-ended to discharge the contents - see figure 1, and means for receiving the crate from the receiving means - see for example 28, 20 - see figure 1.

Claims 2 and 48 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. in view of U.S. Patent No. 4,862,794 to Lapeyre et al.

Referring to claim 2, Nelson et al. does not disclose a boiler system for supplying heated brine and cooking the shellfish product therein and an automated means for transferring the shellfish product from the conk tank to the boiler system. Lapeyre et al. does disclose a boiler system - at 12, and an automated means - at 22, for transferring the shellfish product from the conk tank to the boiler system - see for example figure 1. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. and add the boiler of Lapeyre et al., so as to allow for the shellfish to be properly cooked during processing.

Referring to claim 48, Nelson et al. further discloses an inclined conveyor - at 14, having a first lower end located at a bottom portion of the conk tank - see for example figure 1, and a second upper end extending above and beyond the opposing sidewall of the conk tank housing - see for example figure 1. Nelson et al. does not disclose the means for transferring the shellfish product from the conk tank to the boiler system is a substantially inclined conk tank conveyor with a lower end positioned below the dumping cage and an upper end extending above and beyond the opposing sidewall of the conk tank housing so as to extend over the primary seafood boiler thereby permitting the shellfish product to fall therein upon reaching the end of the conk tank conveyor. Lapeyre et al. does disclose the means for transferring the shellfish product from the conk tank to the boiler system is a substantially inclined conk tank conveyor - at 22,

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In case the space in any of the preceding boxes is not sufficient.

al. in view of U.S. Patent No. 4,916,775 to Gallant.

Referring to claim 3, Nelson et al. as modified by Lapeyre et al. further discloses a primary seafood boiler - at 12, to maintain the boiler at a constant temperature - see for example figure 1 of Lapeyre et al. Nelson et al. as modified by Lapeyre et al. does not disclose a brine mixing tank including a means for introducing water therein and a means for introducing salt therein to create a brine solution of a predetermined concentration in which the shellfish product is to be cooked and a conduit communicating between the brine mixing tank and the primary seafood boiler for the selective transport of brine to the primary mixing tank. Gallant does disclose a brine mixing tank - at 29, including a means for introducing water therein and a means for introducing salt therein - at 30, to create a brine solution of a predetermined concentration in which the shellfish product is to be cooked and a conduit communicating between the brine mixing tank and the primary seafood boiler for the selective transport of brine to the primary mixing tank - see for example proximate 29 and 30 in figure 1. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and add the brine mixing tank of Lapeyre et al., so as to allow for the shellfish to be prepared for removing the shell.

Regarding claim 5, Nelson et al. as modified by Lapeyre et al. and Gallant further discloses a means for agitating the brine and contents therein - see for example at 30 or 31 in figure 1 of Gallant.

Regarding claim 6, Nelson et al. as modified by Lapeyre et al. and Gallant further discloses the agitation means includes at least one paddle wheel type element - at 31, at the surface of the brine to keep the shellfish product moving evenly therethrough - see for example figure 1 of Gallant.

Referring to claim 7, Nelson et al. as modified by Lapeyre et al. and Gallant further discloses the agitation means includes at least one jet nozzle for circulating the brine and product within the boiler - see for example at 30 and proximate 30 in figure 1 of Gallant.

Referring to claim 8, Nelson et al. as modified by Lapeyre et al. and Gallant further discloses the primary seafood boiler - at 12, further includes means for selectively maintaining and monitoring a specific temperature of the brine therein - see for example column 4 lines 43-68 and column 5 lines 1-65 of Lapeyre et al.

Referring to claim 9, Nelson et al. as modified by Lapeyre et al. and Gallant further discloses a salinity monitoring system that assures an adequate brine mix - see at 29-31 and column 2 lines 61-68 of Gallant.

Claim 18 lacks an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulín in view of U.S. Patent No. 4,829,636 to Caroon.

Nelson et al. as modified by Hulín and Lapeyre et al. does not disclose the conveyor including a plurality of rakes for turning the shellfish product to further ensure the uniform cooling thereof. Caroon does disclose a conveyor including a plurality of rakes - see proximate 36 and 40 and column 3 lines 30-42, for turning the shellfish product to further ensure the uniform cooling thereof - see for example figures 1-3. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Hulín and Lapeyre et al. and add the conveyor of Caroon, so as to allow for the position of the shellfish on the conveyor to be controlled.

Claims 25-26 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulín in view of U.S. Patent No. 4,966,072 to Ellis-Brown.

Referring to claims 25-26, Nelson et al. as modified by Lapeyre et al. and Hulín does not disclose the rotating means is a vertically stacked conveyor system having a plurality of staggered parallel conveyors spaced apart one above the other and moving in alternating directions. Ellis-Brown does disclose the rotating means is a vertically stacked conveyor system - at 71-74 and 81-88, having a plurality of staggered parallel conveyors spaced apart one above the other and moving in alternating directions - see for example figure 3. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and Hulín and add the vertically stacked conveyor system of Ellis-Brown, so as to allow for the movement of the shellfish in the device to be controlled.

Claim 29 lacks an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulín in view of U.S. Patent No. 5,651,731 to Gorans et al.

Referring to claim 29, Nelson et al. as modified by Lapeyre et al. and Hulín does not disclose moisture sensors to ensure complete dehydration with no pathogen traces. Gorans et al. does disclose a moisture sensor - at 54, to ensure complete dehydration with no pathogen traces - see for example column 3 lines 9-18. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and Hulín and add the moisture sensor of Gorans et al., so as to allow for the moisture level in the animal to be detected.

Claims 41-42 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulín in view of U.S. Patent No. 4,532,677 to Wenstrom et al.

Referring to claims 41-42, Nelson et al. as modified by Lapeyre et al. and Hulín further discloses separation of debris and shells from finished product by vacuum extraction and loading by-product into packages or drums and working in sequence with the dryer and product transfer system to grade product by size - see for example figures 1-6 of Hulín. Nelson et al. as modified by Lapeyre et al. and Hulín does not disclose the peeling device comprises an inner compartment having a screened bottom, an outer compartment and a blade member that spins within the inner compartment. Wenstrom et al. does disclose the peeling device comprises an inner compartment having a screened bottom - at 62, an outer compartment - see figure 4, and a blade member - at 58, that spins within the inner compartment - see for example figure 4. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and Hulín and add the peeling device of Wenstrom et al., so as to allow for the shell of the animal to be totally removed during processing.

Claims 10-12 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al.





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Supplemental box

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Referring to claim 10, Nelson et al. does not disclose a broth processing system wherein used brine is extracted from the primary seafood boiler and transported to a seafood flavored broth. Goldstein does disclose a broth processing system wherein used food material is extracted from the primary boiler - at 110, and transported to the broth processing system - at 111-130, for preparation into a seafood flavored broth - see for example figure 1.

Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and add the broth processing system of Goldstein, so as to allow for the device to use the byproduct of the device to make an edible product.

Referring to claim 11, Nelson et al. as modified by Lapeyre et al. and Goldstein further discloses broth storage tanks - see approximate 132 in figure 1 of Goldstein, for storage of the finished broth product - see for example figure 1 of Goldstein.

Referring to claim 12, Nelson et al. as modified by Lapeyre et al. and Goldstein further discloses a broth packaging system to package the broth for the market - see for example approximate 132 in figure 1 of Goldstein.

Claim 20 lacks an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulin in view of Galliani.

Nelson et al. as modified by Hulin and Lapeyre et al. does not disclose a transport portion of the conveyor is composed of mesh-like belting to permit passage of air therethrough. Galliani does disclose a transport portion of the conveyor is composed of mesh-like belting to permit passage of air therethrough - see at 23 and 25. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Hulin and Lapeyre et al. and add the conveyor with mesh belting of Galliani, so as to allow for material to pass through the conveyor.

Claim 13 lacks an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. in view of U.S. Patent No. 3,665,555 to Willis.

Nelson et al. as modified by Lapeyre et al. does not disclose a spray system wherein brine is injected into a mist. Willis does disclose a spray system wherein brine is injected into a mist. Willis does disclose a spray system wherein brine is injected into a mist - see for example column 7 lines 23-33. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and add the brine spray device of Willis, so as to allow for the device to produce an edible product.

Claim 32 lacks an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulin in view of U.S. Patent No. 4,829,636 to Carmon.

Nelson et al. as modified by Lapeyre et al. and Hulin does not disclose the conveyor includes a plurality of rakes for turning the shellfish product to further ensure the uniform cooling thereof. Carmon does disclose a conveyor including a plurality of rakes - see for example figures 3-7. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Hulin and Carmon to activate the conveyor rakes. Gorans et al. as modified by Lapeyre et al., Hulin and Carmon does not disclose moisture sensors to activate the conveyor rakes. Gorans et al. as modified by Lapeyre et al., Hulin and Carmon does not disclose moisture sensors to activate the conveyor rakes - see for example column 4 lines 23-27 of Gorans et al.

Referring to claim 34, Nelson et al. as modified by Lapeyre et al., Hulin, Carmon and Gorans et al. further discloses a temperature control means - see for example column 4 lines 23-27 of Gorans et al.

Referring to claim 35, Nelson et al. as modified by Lapeyre et al., Hulin, Carmon and Gorans et al. further discloses thermostats and regulators - see for example column 4 lines 23-27 and column 5 lines 1-25 of Gorans et al.

Claims 36-37 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulin in view of U.S. Patent No. 6,117,003 to Brinson.

Referring to claim 36, Nelson et al. as modified by Lapeyre et al. and Hulin does not disclose contaminant sensors for detecting potential contaminates and toxins - see for example column 3 lines 10-33. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and Hulin and add the contaminant sensor of Brinson, so as to allow for the operator of a potentially hazardous condition - see for example means in communication with the air contaminant sensors to notify the operator of a potentially hazardous condition - see for example column 3 lines 10-33 of Brinson.

Claim 49 lacks an inventive step under PCT Article 33(3) as being obvious over Nelson et al. in view of Gorans et al. Nelson et al. does not disclose a moisture content sensor. Gorans et al. does disclose a moisture sensor - at 54, to - see for example column 3 lines 9-18. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. and add the moisture sensor of Gorans et al. so as to allow for the moisture level in the animal to be detected.

Claims 75-77 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulin in view of U.S. Patent No. 6,248,010 to Sirgo et al.

Referring to claim 75, Nelson et al. as modified by Lapeyre et al. and Hulin does not disclose a pair of rollers on top one

Form PCT/ISA/237 (Supplemental Box) (April 2005)

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In case the space in any of the preceding boxes is not sufficient.

another located at a distal end of the conveyor. Sirgo et al. does disclose a pair of rollers - at 30-36, positioned vertically on top one another - see figure 2, and having a predetermined gap therebetween - see figure 2, wherein the at least one pair of rollers is positioned at a distal end of the seafood conveyor - see figure 1. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and Hulin and add the rollers of Sirgo et al., so as to allow for the shells of the shellfish to be quickly removed.

Referring to claim 76, Nelson et al. as modified by Lapeyre et al., Hulin and Sirgo et al. further discloses the pair of rollers is able to at least one of crush and crack shells of the shellfish product passing therethrough to allow for a more efficient dehydration thereof - see for example figures 1-10 of Sirgo et al.

Referring to claim 77, Nelson et al. as modified by Lapeyre et al., Hulin and Sirgo et al. further discloses the at least one pair of rollers are adjustable thereby producing different sized gaps in order to accommodate a plurality of different types of shellfish therethrough - see for example figures 1-10 of Sirgo et al.

Claims 78-79 lack an inventive step under PCT Article 33(3) as being obvious over Nelson et al. as modified by Lapeyre et al. and Hulin in view of Goldahn.

Referring to claim 78, Nelson et al. as modified by Lapeyre et al. and Hulin does not disclose a freezer device. Goldahn does disclose a freezer device - at 120-124, for freezing the shellfish product and a first means - at 109, for transferring the shellfish to the freezer device - see figure 2, and a second means - at 124, for transferring the frozen shellfish product for further processing - see for example figure 2. Therefore it would have been obvious to one of ordinary skill in the art to take the device of Nelson et al. as modified by Lapeyre et al. and Hulin and add the freezer device of Goldahn, so as to allow for shellfish to be easily packaged for sale.

Referring to claim 79, Nelson et al. as modified by Lapeyre et al., Hulin and Goldahn further discloses first and second peeler devices - see column 6 lines 3-23 of Lapeyre et al.

Claim 4 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest one or more auxiliary boilers in line with the conduit for heating the brine to be desired temperature and storing it therein, wherein the brine is able to replenish used brine that has been removed from the primary seafood boiler.

Claim 38 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the dryers include a video monitoring system to allow an operator to observe the operation within the dryers.

Claim 39 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the dryers include rheostats.

Claims 80-86 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest means for using the shellfish byproduct to produce a shellfish flavored oil able to be consumed by human beings

Claims 1-53 and 75-86 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.